

Projected Ozone SIP Point Source Inventory

The Ozone SIP requires a point source inventory for projections. Projection (future year) inventories are compared to the baseline inventory to verify attainment of the air quality standard. The analysis that supports this SIP evaluated the 2023 inventory. As with all inventories collected for this analysis, the pollutants included PM₁₀, PM_{2.5}, NO_x, SO₂, VOC, CO, NH₃, and all HAPs emitted by the source. The unit of measurement was tons per year. Once the inventory was completed, a pre-processor called SMOKE then converted it to a 24-hour period.

Source Selection:

At the beginning of this ozone SIP, the 2017 triennial inventory was the latest and most current inventory available for point sources, which included all major sources, Title V sources, and any sources included in the PM₁₀ or ozone maintenance plans. Staff used the definition of a Type B Source under Title V of the Clean Air Act (as specified in 40 CFR Appendix A to Subpart A of Part 51) to define point source thresholds in the nonattainment areas. The provided inventory includes all Type B sources of NO_x and VOC in the nonattainment area. Emissions from sources under the Type B thresholds are included in the area source base year inventory, as they do not have large enough potential emissions to qualify for the point source base year inventory.

According to the above definition, Utah had 48 Type B Sources as of 2017 based on the facilities' potential to emit in their Approval Orders. An additional two sources were re-designated as major sources of NO_x or VOC after 2017: 10005 Kinder Morgan Altamont and 10219 Kinder Morgan Bluebell. The following three sources were re-designated as minor after 2017, and were removed from the inventory for 2023: 10129 Wasatch Integrated Waste Management District – Davis Landfill, 10572 Rio Tinto Kennecott Copper LLC – Central Laboratory, and 10790 Brigham Young University. For Title V purposes, it was determined that Chevron's loading rack and refineries are considered a single source, even though they have two separate approval orders (10119 and 10556). Similarly, Holly Energy Corp reports all of the emissions from two separate approval orders together. Table 1 lists the 50 Type B Sources along with their 2023 projected emissions for PM₁₀, PM_{2.5}, SO₂, NO_x, VOC, CO and NH₃. Note: following EPA comments to the draft of the Moderate SIP, five facilities in the Wasatch Front NAA section of Table 1 should move to the Surrounding Area section. These five facilities are:

- 10706 Dugway Proving Ground
- 10725 Clean Harbors Aragonite LLC
- 10794 McWane Ductile
- 11284 Hill Air Force Base Test and Training Range
- 13031 PacifiCorp Energy Lakeside Power Plant

10706, 10725, and 11284 are in Tooele county, outside the NAA boundary. 10794 and 13031 are in Utah County, which is part of the Southern Wasatch Front NAA.

Table 1. Ozone Maintenance SIP - 50 Major Point Sources with 2023 Projected Emissions

Uinta Basin NAA												
Facility ID	Facility Name	County	PM10-PRI	PM10-FIL	PM25-PRI	PM25-FIL	PM-CON	NOX	SO2	VOC	CO	NH3
10005	Kinder Morgan Altamont LLC: Altamont Main (Duchesne	Duchesne	2.3823	0.9217	2.3823	0.9217	1.4602	17.0711	0.1273	64.5406	27.6051	0.0552
10209	Kinder Morgan Altamont LLC- Altamont East C Duchesne	Duchesne	7.9598	5.3833	7.9598	5.3833	2.5763	613.1106	0.1653	57.0223	63.2408	0.0000
10210	Kinder Morgan Altamont LLC- Altamont West (Duchesne	Duchesne	3.5316	1.6243	3.5204	1.6243	1.9083	821.9573	0.1283	90.9684	45.8132	0.0000
10211	Kinder Morgan Altamont LLC: Altamont South Duchesne	Duchesne	5.5768	3.3753	5.5768	3.3753	2.2041	502.4019	0.1501	65.9876	54.0106	0.0000
10219	Kinder Morgan Altamont LLC Bluebell Facility	Duchesne	4.0078	0.5750	4.0078	0.5750	3.4316	61.3078	0.2039	81.6803	71.9379	0.0000
Wasatch Front NAA												
Facility ID	Facility Name	County	PM10-PRI	PM10-FIL	PM25-PRI	PM25-FIL	PM-CON	NOX	SO2	VOC	CO	NH3
10119	Chevron Products Co - Salt Lake Refinery	Davis	43.3174	8.9829	30.4620	8.8595	21.6029	177.0642	34.2783	329.9713	271.1627	8.5710
10121	Hill Air Force Base- Main Base	Davis	17.3039	10.9707	11.6425	5.4363	6.4118	133.5348	1.3376	180.4889	145.8418	2.4735
10122	Big West Oil, LLC- Big West Oil Refinery	Davis	50.7737	9.7943	16.1545	4.3521	12.4870	114.7775	59.1247	632.4574	210.4474	6.4962
10123	Holly Corp- HRMC and HEP Woods Cross Oper	Davis	19.1708	7.0916	19.0422	7.0695	11.3419	153.6025	48.2394	229.3247	411.2320	8.7672
10335	Tesoro Refining & Marketing Company LLC - S	Salt Lake	182.8874	79.5092	113.6379	26.5423	78.9645	323.1224	200.9274	257.4648	270.8523	3.5560
10346	Kennecott Utah Copper LLC- Smelter & Refiner	Salt Lake	319.3747	152.1921	209.8081	47.4987	104.2295	166.8081	722.8643	12.6762	119.7120	8.1249
10354	University of Utah- University of Utah facilities	Salt Lake	11.3709	3.0768	11.3697	3.0762	7.9529	45.8176	0.7910	8.9094	43.8829	2.8334
10355	Pacificorp Energy- Gadsby Power Plant	Salt Lake	7.3737	1.2219	4.5409	1.2219	3.2969	35.0946	0.4160	2.0403	24.4946	4.2681
10556	Chevron Products Co - SLC Terminal- Salt Lake	Davis	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	15.1092	0.0000	0.0000
10571	Kennecott Utah Copper LLC: Mine & Copperto	Salt Lake	1445.5287	1217.0225	361.0823	139.1562	4.4226	5554.6359	3.5695	278.0962	1793.1104	2.3459
10706	Dugway Proving Ground- U.S. Army-Dugway P	Tooele	743.3595	736.0263	79.3759	73.8212	0.4005	18.3527	1.1485	13.5368	144.2969	0.1371
10707	Lhoist North America - Grantsville Plant	Tooele	25.3285	0.0000	3.8670	0.0000	0.0000	0.2222	0.0004	0.5137	0.2757	0.0000
10716	US Magnesium LLC- Rowley Plant	Tooele	880.1692	867.6373	662.5751	649.4191	4.1837	1127.3234	14.4601	701.2122	343.0685	1.9288
10725	Clean Harbors Aragonite LLC: Hazardous Wast	Tooele	4.8140	2.7484	2.2973	0.6868	0.9742	163.3217	30.7947	7.5680	56.1551	0.0000
10794	McWane Ductile - Utah	Utah	17.3882	10.8188	13.3419	8.7565	1.6324	37.4792	9.3795	29.0273	14.8468	0.8118
11284	Hill Air Force Base- Utah Test and Training Ran	Tooele	186.4273	172.2383	68.4929	63.7077	3.5880	15.5024	0.9081	3.8505	5.5080	0.0921
11386	Hexcel Corporation: Salt Lake Operations	Salt Lake	157.3022	7.5035	129.0956	6.2355	17.8282	191.0675	39.8646	154.6402	132.7548	93.7604
12495	Utah Municipal Power Agency: West Valley Po	Salt Lake	11.5023	3.3113	11.5023	3.3113	8.1910	22.8511	0.5213	3.6598	28.0801	0.0000
13031	PacificCorp Energy: Lake Side Power Plant	Utah	59.8310	24.9836	59.8306	24.9832	34.8475	190.3614	6.9850	24.1384	843.1336	101.4503
Surrounding Area												
Facility ID	Facility Name	County	PM10-PRI	PM10-FIL	PM25-PRI	PM25-FIL	PM-CON	NOX	SO2	VOC	CO	NH3
10007	Holcim (US) Inc.- Devil's Slide Plant	Morgan	76.5490	73.1010	16.4925	13.0805	2.2481	1515.1307	208.3825	47.9024	1125.0819	4.1947
10008	Nucor Steel- Nucor Steel	Box Elder	48.4800	42.1495	34.3170	28.3178	6.8458	192.6471	84.6670	33.2554	726.6239	2.3657
10009	ATK Launch Systems - Promontory	Box Elder	80.0276	17.0136	56.1022	16.9643	3.7351	37.8430	0.8355	31.6104	38.6465	6.0151
10028	Vulcraft - Division of Nucor Corporation- Steel	Box Elder	18.9426	18.1266	8.3458	7.6738	0.0172	6.4937	0.2640	45.3329	6.7409	0.0000
10034	Paradox Midstream, LLC- Lisbon Natural Gas P	San Juan	66.8466	33.2020	66.4066	32.7620	33.6452	201.4240	0.6998	44.7100	308.3672	2.1193
10096	Sunnyside Cogeneration Associates- Sunnyside	Carbon	58.7708	52.5982	35.9177	29.7505	5.9752	388.0298	430.4061	22.8599	38.5144	0.1330
10107	ECDC Environmental LC: East Carbon Landfill	Carbon	16.8240	14.3754	3.8746	1.4470	0.0311	18.3876	1.6177	20.3316	43.0502	0.0027
10237	PacificCorp- Hunter Power Plant	Emery	453.9143	335.4615	347.0992	228.5954	118.5510	8806.5921	3163.1598	107.8693	2844.7190	1.2290
10238	PacificCorp- Huntington Power Plant	Emery	426.9771	274.3241	197.0996	127.1650	69.7364	5345.7116	2054.6484	67.3639	4600.8559	0.7344
10259	Northwest Pipeline GP: Cisco Compressor Stat	Grand	0.0914	0.0269	0.0914	0.0269	0.0645	2.8903	0.3120	0.0410	1.2366	0.0055
10303	Ash Grove Cement Company- Leamington Cen	Millard	123.5204	99.5272	106.4630	82.4844	24.2799	1258.9265	20.1223	55.9834	6631.3096	62.0641
10311	Materion Natural Resources- Delta Mill	Millard	29.9980	0.7176	5.8460	0.6784	1.0775	18.0329	0.5858	8.1816	11.6626	108.6201
10313	Graymont Western US Incorporated- Cricket N	Millard	376.0730	138.4320	190.0698	107.4710	4.5470	801.5595	32.2570	19.6221	389.4118	33.9998
10327	Intermountain Power Service Corporation- Int	Millard	885.8613	102.6162	832.2236	88.4568	742.9961	8407.2479	2237.1781	96.9843	868.8746	1.4835
10627	Northwest Pipeline GP: Moab Compressor Sta	San Juan	0.6765	0.4860	0.6765	0.4860	0.1906	38.9641	0.2358	1.4855	5.5811	0.0000
10676	Utelite Corporation: Shale Processing	Summit	119.0387	43.8148	50.2588	13.2833	30.0762	281.9446	182.9719	3.0873	12.3542	0.0349
10892	St. George City Power: Red Rock Power Gener	Washington	3.0858	0.8984	3.0853	0.8979	2.1891	14.8762	0.3336	2.6478	5.5920	0.0000
11532	Questar Pipeline LLC: Kastler Marushack Com	Daggett	4.9376	2.0368	4.9372	2.0368	2.8889	722.3381	0.8094	50.6240	31.6776	3.2158
11767	Genpak Corporation: Polystyrene Foam Produ	Iron	0.6206	0.5480	0.6206	0.5480	0.0727	1.1986	0.0077	79.1555	0.5100	0.2295
12512	Kern River Gas Transmission Company- Veyo C	Washington	8.5157	2.4497	8.5157	2.4497	6.0660	85.9303	0.3044	6.6852	13.9106	0.0112
12524	PacificCorp Energy: Currant Creek Power Plant	Juab	21.8258	1.7319	21.8257	1.7318	20.0923	142.0319	2.4696	9.0280	268.3939	36.8464
12929	EnerVest Operating - Sage Brush Flat Compres	Carbon	3.1719	0.2804	3.1719	0.2804	2.9806	20.1139	0.1794	27.3019	4.0179	0.0000
12948	EnerVest Operating L.L.C.: Dry Canyon Compr	Carbon	3.3367	1.5849	3.3367	1.5849	1.7515	9.7379	0.1110	18.8784	12.8894	0.0525
13284	EnerVest Operating L.L.C.: Interplanetary Com	Carbon	4.4536	2.1727	4.4536	2.1727	2.3284	6.7547	0.1431	17.5082	9.3904	0.0000
14010	Energy Fuels Resources (USA) Inc. Tony M. Mir	Garfield	12.9200	0.0000	3.5700	0.0000	0.0000	142.1400	0.1000	5.0100	19.1800	0.0000
14107	Procter and Gamble-Paper Manufacturing Plar	Box Elder	43.2064	14.0879	42.9790	13.8605	28.9498	29.8970	0.4024	18.2742	29.7647	1.2813

Projection Methodology:

A description of how the 2017 base year emissions were projected to future years for each source is listed below.

Emissions Projected using Kem Gardner Data

Data from the Kem Gardner institute¹ was selected as a basis for the projections, because the organization took over producing population projections for the state in 2017 that are based on census data. Their long-term projections are redone every four years, and they update shorter term projections every two years. The set of data used by UDAQ is based on employment by industry. These projections are in turn based on national projections that are extrapolated by industry. REMI projection numbers were previously used by the state, but determined to be updated less frequently, and were therefore replaced with data from the Kem Gardner institute.

The method for projection divided the future year by the base year (2023/2017), then matched this ratio with base year emissions by county and NAICS code. The 2017 tons/year were multiplied by the ratio to create a projection for 2023 tons/year.

Site-Specific Changes to Projected Emissions

Major sources within the nonattainment areas, and those that were found to greatly impact the nonattainment areas, were provided individual workbooks and encouraged to update these workbooks to reflect site-specific plans. Changes included removal of permanently shut down equipment, use of alternative projection factors, and use of different base years.

The following changes were made to the individual workbooks to increase the accuracy of the 2023 projections:

- Site 10219 Kinder Morgan Altamont LLC Bluebell Facility used 2019 as a base year as it was the first available year of data.
- Site 10346 Kennecott used 2018 as a base year for projections because the smelter was not operational in 2017.
- Site 14010 Tony M. Mine has not operated since 2012, but in an effort to remain conservative, PTE emissions were used in place of 2023 projections for the site.
- Site 10121 Hill Air Force Base used maximum actual emissions from the past five years rather than a projected 2017 inventory for their 2023 emissions.
- Site 10119 Chevron Refinery calculated projection factors for NO_x and VOC, 1.07 and 0.94 respectively, that are based on Chevron's inventories from 2017-2020, taking into account equipment that has been removed and added, as well as their Tier 3 project.

¹ Kem C. Gardner Policy Institute (2017). *2015-2065 State and County Projections*. <https://gardner.utah.edu/demographics/user-data/>

- Site 10354 University of Utah used a 6% increase rather than 25% based on average growth numbers and on-site environmental reductions. The University of Utah also increased diesel engine emissions based on future plans for new buildings.

Beyond these specific changes, facilities removed emissions from equipment that had already been shut down between 2017 and 2021, or is planned to be shut down by 2023. Facilities also added emissions for pieces of equipment that have been added between 2017 and 2020 or are planned additions. Facilities also applied RACT from the previous PM_{2.5} SIP, which should be utilized by 2023.

Data Collection and QA/QC

UDAQ manages point source emissions inventory data with the online platform State and Local Emissions Inventory System (SLEIS). SLEIS utilizes extensive built-in computing capabilities which standardize calculations. SLEIS also contains extensive QA/QC which guides point sources as they submit their data, greatly reducing oversight required by UDAQ staff. The submitted emissions inventories were thoroughly reviewed using additional QA/QC by UDAQ staff before being finalized. Each facility's submission is reviewed and compared against previous inventories and the corresponding permit to ensure all equipment is captured in the inventory and that calculation methods remain sound and consistent. This QA/QC process greatly surpasses EPA guidance requiring 10% QA/QC as the minimum criteria necessary for a SIP inventory.

